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ABSTRACT

This study was performed to determine whether graphic organizers or traditional methods were a more effective way of instructing and assessing vocabulary development. The traditional methods included instructing with the use of context clues and/or dictionary use, and assessing with the use of matching, cloze passages, and/or fill-ins. A group of ten, 7th grade boys with learning disabilities took part in the study. The study consisted of alternating the traditional and graphic organizer instructional and methods assessments over an 8-week period. The results of the study revealed no significant differences in vocabulary development with the use of graphic organizers versus traditional methods. Possible explanations for this finding are discussed. Appendixes contain four examples of how "Part to Whole" graphic organizers can be used; one example of "Vocabulary Matching"; and one example of a "Word Bank." (Contains 37 references.) (Author/RS)

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The Use of Graphic Organizers in Vocabulary Instruction

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Presented in Partial Fulfillment of the Requirements
For the Master of Arts Degree in
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ABSTRACT

This study was performed to determine whether graphic organizers or traditional methods were a more effective way of instructing and assessing vocabulary development. The traditional methods included instructing with the use of context clues and/or dictionary use, and assessing with the use of matching, cloze passages, and/or fill-ins. A group of ten, 7th grade boys with learning disabilities took part in the study. The study consisted of alternating the traditional and graphic organizer instructional and methods assessments over an eight-week period. The results of the study revealed no significant differences in vocabulary development with the use of graphic organizers versus traditional methods. Possible explanations for this finding are discussed.

THE USE OF GRAPHIC ORGANIZERS IN VOCABULARY INSTRUCTION

VOCABULARY INSTRUCTION

I currently used context clues and glossary/dictionary use to define selection vocabulary in my Developmental Language classes. Prior to my vocabulary lessons I would highlight all of the words that were to be defined with the use of context clues. I wrote a list of vocabulary words, for a given selection, on the board. I divided the words into those that could be found in the student glossary, and those that my students could define through the context. When they had defined all of the words that could be identified in their glossaries, I worked with the students to define the remaining vocabulary through the use of context clues. I would go to my teacher's manual and read the pieces of the selections that included the remaining selection vocabulary and had students generate their own definitions. I would then review their definitions and made any necessary revisions before actually reading the complete selection with the students. This was a routine process in my classroom. My students knew what was expected of them and preceded according. Typical homework assignments that followed any vocabulary instruction included writing vocabulary words in original sentences or using vocabulary words in a paragraph. I thought this type of vocabulary instruction was sufficient until I would ask my students to recall the meanings of words at a later date. The vocabulary words that I would teach would stay only in their short-term memory. I also realized that, other then when I assigned vocabulary use, my students did not carry their new vocabulary over to their writing assignments. They were not linking their new knowledge to their other assignments and content area classes. I first thought that it was

just part of their learning disabilities, but I didn't want to use their disabilities as an excuse and give up. I realized the importance of vocabulary growth, therefore I didn't want to eliminate the instruction of vocabulary in my classroom altogether.

GRAPHIC ORGANIZERS

In response to this dilemma I asked myself, what is the point in teaching vocabulary that doesn't further their academic performance? In an attempt to improve my teaching of vocabulary, and my students' vocabulary skills, I began to read and research. Through my research I found that, although the use of context and the use of definitions are widely accepted as methods for helping students learn new words, neither is sufficient for development of relational knowledge necessary for in-depth understanding (Irvin, 1990). This research verified my observation and led me to draw the conclusion that in order for vocabulary instruction to be effective, I was going to have to search for a reliable source for instruction. As in my class, Barton, (2001) states, for many students around the country, vocabulary instruction means an assigned list of anywhere from ten to forty new words to dutifully copy and memorize. First, when attempting to design a way to instruct and teach vocabulary many questions must be addressed. Some of these questions that should be answered, according to Dye (2000), include: How do we remember things? How do we take advantage of our short-term memory? Do people remember things in different ways? What can help students improve their memory of content? What can teachers do to support students with disabilities in storing long-term memory? Through reading about current strategies for teaching vocabulary I came across the use of graphic organizers for vocabulary instruction. According to Egan (1999), graphic organizers serve as a visual representation of knowledge, a way of structuring

information and arranging key concepts of an idea or topic into a pattern. Through further research on graphic organizers I found answers to the aforementioned questions, which led me to believe that graphic organizers are an effective approach for optimal vocabulary instruction.

BENEFITS OF GRAPHIC ORGANIZERS

Organizing information when teaching vocabulary has been found to be beneficial. There are many benefits to graphic organizers. Researchers express their intense beliefs in graphic organizers through their research. According to Egan (1999), as students work cooperatively using graphic organizers, they learn to create, to share, to disagree and to respect one another's ideas. They can also learn to construct new meaning and appreciate one another's thinking and learning styles. Cooperative learning contributes to positive social interaction in the classroom as well. Dye (2000), views graphic organizers as visual displays that teachers use to organize information in a manner in which the information is easier for the student to understand and learn. Bromley, DeVitis, & Modlo (1995) believe that because graphic organizers involve both visual and verbal information, they are beneficial to students with a wide variety of learning styles and abilities. As an in-class support teacher as well as a resource center teacher, this information can contribute to the learning of all of the students in the mainstream classes. Rather than using other modifications that only benefit the students with learning disabilities, graphic organizers can be incorporated and benefit the students without learning disabilities as well.

"A graphic organizer is a visual representation of knowledge, a way of structuring information, and of arranging essential aspects of an idea or topic into a pattern using

labels" (Bromley, Irwin-DeVitis, & Modlo, 1995 p. 626). Classifying, organizing, and summarizing are integrated through this process. They are all study skills that can benefit students in all of their classes. "Graphic organizers also serve as retrieval cues for information" (Dunston, 1992 p. 539). "Graphic organizers are visiospatial arrangements of information containing words or statements that are connected graphically in a meaningful way" (Horton, Lovitt, & Bergerud, 1990 p. 50). They highlight key vocabulary, provide organized visual displays, and encourage discussions along with sharing of ideas and information. According to Bone (2000), when students use graphic organizers they learn to put thought into their learning, rather than simply recall facts. The more of their own thoughts that are incorporated in their learning, the more likely they will make meaningful connections, and, consequently, improve their recall. The graphic organizer can make information more apparent, distinct, and articulate for the learner. When instructing vocabulary with graphic organizers teachers, "can activate pre-reading and post-reading thought processes" (Egan, 1999 p. 642). The use of the graphic organizer as an active learning strategy allows teachers to introduce information in an alternate way, other than the printed word. Every individual learns differently. If vocabulary is solely introduced through the printed word the teacher will only reach those students who learn by that style of teaching.

Allen (1999), states that constructing graphic organizers aids and assists students as they discover meaning through intriguing pathways, separate from the traditional method. "When students with or without learning disabilities, make a personal connection it helps them remember the word" (Bone, 2000 p. 22). Students are able to understand the concept, define it in their own words, and apply it to their lives. According

to Monroe (1998), student-constructed graphic organizers allow teachers to observe the level of student understanding so that they may provide instructional interventions. Although students are constructing their own learning process, graphic organizers also allows teachers to intervene accordingly. "Graphic organizers have been shown to improve the academic performance of low-achieving and general education students" (Lovitt & Horton, 1994 p. 105). Based on this information, it is plausible that if all teachers used this form of instruction in their classrooms, the lower functioning students would be able to keep up with the general education students more effectively.

SCHEMA THEORY

According to Monroe (1998), the graphic organizer has its roots in *schema theory*. Schema theory states that new information must be linked to pre-existing knowledge. It is the role of the teacher to see that the child has prior knowledge related to the concept and also to provide the child with a means to connect what is being taught with the child's prior knowledge.

The schema theory explains this integration even further. Schema theory states that a person takes new information and stores it in pre-existing hierarchies. Clearly, schema theory sets the groundwork for advanced organizers. When presented at the beginning of a lesson, advanced organizers orient the students to information that the teacher is about to present. This practice serves as an anticipatory guide, which can get the students excited about learning. "The graphic organizers are visual displays used to organize information, therefore these processes help students integrate the new knowledge into their scaffolds" (Dye, 2000 p. 74). Information that fits into a student's existing schema is more easily understood, learned, and retained than information that

does not fit into an existing schema. Dye (2000), writes that helping students link new information with pre-existing knowledge is one way in which teachers can assist students in learning new information in content area classes as well. Graphic organizers serve as retrieval cues for information and facilitate higher-level thinking (Monroe, 1998). When new information is presented in such a way it not only encourages students to use prior knowledge but also adds to their existing schema. Adding knowledge to the schema promotes higher level of thinking. "Under a teacher's guidance they can derive great benefit from helping one another to activate prior knowledge selectively" (Pearson & Spiro, 1982 p. 47), "to construct new meaning, and to appreciate one another's thinking and learning styles" (Kaiden, 1998 p. 478). According to Dye (2000), given the lack of background knowledge and the inability to organize the information, it may be difficult for a student with learning disabilities to retain this newly learned information. Helping the student link new information to existing knowledge is just one way teachers can assist students in learning new information in content area classes. "New words not only need to be integrated into the learner's prior knowledge but should also be repeated in multiple contexts and used in meaningful ways" (Allen, 1999 p. 39).

When it is advisable to build up students' prior knowledge in advance, teachers may choose to conduct vocabulary lesson before reading. Although, "students found that for the most part, finding meaning doesn't happen before reading, but each day as they read and connect those words to the complex lives that they lead" (Bone, 2000 p. 22). This process contributes to each student's schema development. Through the use of graphic organizers, Allen (1999) was able to observe students learning new concepts, applying them to their lives, and remembering definitions beyond the next day or week.

Irvin (1990), suggests to develop conceptual understanding, vocabulary instruction should involve students in deep processing of words. According to Monroe (1998), the connections between schema theory and graphic organizers is not explicitly stated in the existing research, the assumption is that key vocabulary terms that are graphically displayed can activate prior knowledge more instantaneously than abstract prose. Dunston (1992), believes graphic organizers organize information to be learned, connect it to what is known, and allow the reader to interact with the text. When students feel an interaction and understand what they are reading, they are more apt to continue and less apprehensive about reading from a text.

STUDENTS WITH LEARNING DISABILITIES

Graphic organizers may be the answer for students with learning disabilities in the mainstream as well as their resource room classes. "Students with mild to moderate disabilities need strategies to help them achieve success in their content area classes" (Dye, 2000 p. 72). Students with learning disabilities in middle and high school grades need assistance in content area reading to integrate new information with their prior knowledge. They also need to obtain important information from the text, and to remember what they have read. According to HAMFF (1999), expository texts present many challenges to students with disabilities, including lack of logical sequencing of content, dense and difficult vocabulary, and rapid pace of new information. "As adolescents move out of self-contained and resource programs into inclusive classrooms, increasing numbers of general and special educators are faced with the challenge of how to teach reading and vocabulary to these particular students who have not mastered this basic skill" (Lebzelter & Nowacek, 1999 p. 1). Strategies that have been developed are

based on the indication that learning is an active process in which students link new information to prior knowledge. Many strategies that activate prior knowledge, establish purpose, preview vocabulary, and organize information are teacher directed but student produced. According to Hill (1992), delayed learners need a great deal of structure and organization in order to learn new facts. Most students with learning disabilities have difficulty processing information and lack the ability to organize information. In this case, teachers can provide the structure, while students provide the information. Information must be presented to them in such a way that it is clear and organized. Learning strategies need to be adjusted to meet the special needs of all students. HAMFF (1999), states that the benefits to using graphic organizers, as described in the literature, are numerous, and especially benefit students with learning disabilities.

Benefits of effective use of graphic organizers have been displayed on all levels of learning. Egan (1999) suggests graphic organizers are suitable for different class learning arrangements whether individual, paired, or grouped. Cooperative learning groups are widely recommended for encouraging the success of students with disabilities in inclusive content area classes, and graphic organizers can be integrated with that. According to Lebzelter & Nowacek (1999), activity based lessons prove to be as or more effective than textbook-based lessons for teaching vocabulary and application skills to students with learning disabilities. Teachers should prepare students for activity-based lessons in the same way as suggested previously, by pre-teaching the necessary vocabulary and background knowledge. Textbooks contain many features known to be helpful for students with disabilities that are rarely pointed out. Lebzelter & Nowacek (1999) suggest that students demonstrate problems learning vocabulary words even if

they were defined in the book. Most textbooks offer sufficient examples that should not be construed as a critical review of the text. According to Dye (2000), as special education teachers, one of our goals is to ensure, to the best of our ability, that students are achieving success in all classes. We must present information in a manner that is clear and organized. Students need to learn how to read the textbook so that they can learn vocabulary and comprehend the content material effectively.

According to HAMFF (1999), secondary students acquire about 3000 new words per year as they read numerous materials as part of content area and independent reading. Most students that graduate from high school will have encountered more than 88,500 word families. Vocabulary knowledge is acquired rapidly during the school years. Research has shown that the rate at which students acquire vocabulary varies tremendously. Allen (1999) states that students with learning disabilities tend to have poor vocabularies because of their limited involvement with reading activities. The vocabulary gap between good readers and poor readers increasingly widens over time, as stated by Allen (1999). The ramifications of limited vocabulary knowledge include difficulties with reading and comprehending content area text. According to Allen (1999), students with poor vocabularies do not acquire the meaning of new words as quickly as student with richer vocabularies. Allen (1999) suggests that students with learning disabilities benefit from an integrated approach to vocabulary development that includes explicit approaches to teaching word meanings, and the development of strategies for learning vocabulary as it appears in context. Graphic organizers are perfect for visually displaying all of the necessary information. They can help learning disabled students develop characteristics of a good reader. According to Allen (1999), a good

reader considers what he or she already know about the topic, use text features to get a sense of what they will read and monitor their reading by recognizing comprehension programs. Furthermore, students use fix up strategies, context clues to figure out the meaning of vocabulary and concepts, identify the main idea and important details, read fluently, use word identification strategies to decode unfamiliar words, recognize and use text structures to gain meaning from reading, summarize reading, reflect on content, and draws inferences. Graphic Organizers can readily display this information for the students.

INFORMATION PROCESSING

According to cognitive theory, a student is bombarded with a great deal of information. "All this information enters the sensory register and is held there for only a few seconds. The information is either processed immediately or is forgotten. If the student chooses to process the information, it then moves from the sensory register to short-term memory" (Dye, 2000 p. 73). At that point, the student must rehearse this newly received information or it will be lost. The rehearsal is important because the longer a piece of information remains in short-term memory and is actively used, the greater the chance that this information will move from short-term memory to long-term memory. Clearly, this is one of the key points in teaching and helping the student move pertinent information into long-term memory. According to Dye (2000), there are three parts to long-term memory: *procedural*, *episodic*, and *semantic*. Procedural memory stores information about how to do something. Episodic memory stores information about personal experiences. Semantic memory is organized in a different fashion. It stores facts and general information in networks of connected ideas or relationships. The

concept of semantic memory is grounded in generative learning. Wittrock, (1986), states that if learners are to discover or truly understand the new information, they must actively integrate this information into their existing knowledge. Students can use a graphic organizer to integrate new information.

Vocabulary knowledge is necessary in comprehending text. According to HAMFF (1999), there are three levels in processing vocabulary knowledge. The three levels include: association processing, where students link their understanding of the new word to a synonym or a specific context; comprehension processing, where students apply associative knowledge of the word, such as filling in a blank to complete a sentence or grouping the word with other words according to specific criteria; and generation processing, where students using their knowledge of the word by creating a novel synthesis of the new word and known information. For example, they define the word in their own words or recognize the semantic features of the word. All of the aforementioned processing skills are reinforced and can be integrated through the use of graphic organizers. With all three levels of processing being addressed there is a greater chance of reaching all students and improving their recall of new vocabulary.

One might ask, how can graphic organizers be created to meet all three levels of processing? There are many suggestions and strategies for appropriate and effective instructional use of graphic organizers. Activities involving a graphic organizer should promote interaction amongst the students. Graphic organizers can be used for individual, paired or group learning activities. Egan (1999) suggests that graphic organizers can be used frequently but they should not be used too predictably or exclusively. Hill (1994), states that prior to introducing graphic organizers, teachers must talk the students through

the process of using the graphic organizer, constantly checking for understanding. This is where processing skills can be encouraged and reinforced. Graphic organizers should be kept visible throughout the lesson so that students can refer to them as often as necessary in order to become familiar with significant information. Constant reinforcement can remediate vocabulary inconsistency. They can also be used as a guide for learning. Egan (1999) suggests that before using this organizer with students, teachers should experience the process themselves. Teachers who complete a graphic organizer activity become learners with their students, adding greater authenticity to their own instructional efforts. When teachers share their metacognitive processes with their students, it is referred to as a think aloud exercise. When teachers model their level of processing, students pick up key characteristics that they can imitate to guide their learning accordingly. As students get more comfortable using graphic organizers on their own, teachers can have students work together and promote interaction among students. As they work cooperatively using graphic organizers, they learn to work with others, and pick up necessary character skills that can be useful on a daily basis in life. According to Merkley and Jeffries (2001), when implementing graphic organizers teachers can have students verbalize the relationship or links among concepts expressed by the visual to open the opportunity for student input. The teacher can then observe and internalize how students connect new information to past learning. Teachers can use this process to make reference to the upcoming text and seize opportunities to reinforce decoding and structural analysis of prior and present selection vocabulary.

GRAPHIC ORGANIZER INSTRUCTION

One specific use of graphic organizers is displayed through "Concept-Related Vocabulary Instruction." According to Barton (2001), in concept-related vocabulary instruction, students link individual words with larger literature concepts. This form of instruction features a visual organizational framework to display links directly. These links include the relationship between each individual word and a particular concept, the relationships among words themselves, and the relationships between new words and ones students already know. Students take part in constructing the visual by attempting to organize specific words into their respective relationships. Teachers play a guiding role by helping students practice saying and writing the words in the course of developing a visual representation or graphic organizer. Without this practice, many students won't really learn the words, no matter how carefully they are organized.

Just as with most skills, practice makes perfect. Students' abilities to reason will be stimulated by various visual representations, graphic organizers, of the relationships between words and concepts. The four visual structures included in Barton's (2001) article are intended as a jumping off point to get started. First, the teacher can actively encourage creative thinking by challenging students to reorganize the words from one structure into a different representation. The teacher will not need to develop a concept related vocabulary lesson for every piece of literature they read. In these situations the teacher can use other, less involved, methods to help students deal with words they don't know. The teacher can model the use of context clues and structural analysis as strategies for independent word learning. Secondly, shared reading offers teachers multiple and diverse opportunities to teach new words and word-learning strategies.

Bone (2000), asks her students to predict what words they would expect to find in a book about a topic and to list them accordingly. After looking at their lists, she has a pretty good idea of their past experiences with this concept and where she would need to fill in the gaps. This strategy makes them more active readers because they would search the novel carefully, proudly announcing when they found words they had predicted. In the past she had highlighted the more difficult words and pre-taught them at the start of each chapter, just as I did. She was making her students dependent on her. Therefore she decided which words were difficult without even asking them what they knew and did not know. Allen (1999) states that, making vocabulary study meaningful and useful for students has always been the difficult part. "Vocabulary instruction needs to be an integral part of content learning, therefore it should not be a dreaded experience" (Harmon & Hedrick, 2000 p. 155). The goal of vocabulary instruction is to help students develop and apply vocabulary knowledge across a variety of contexts and to increase their knowledge of strategies in defining new vocabulary independently.

According to Beck and McKeown (1991), vocabulary instruction consists of providing numerous encounters with words and concepts and discussions and opportunities to use these words and concepts across a variety of contexts. For instance, teaching specialized and technical vocabulary, presenting new vocabulary in semantically related groups, providing multiple exposures to words across contexts, providing instruction on a limited number of new words in each lesson, and relating the words to the content area text prior to a lesson are significant practices.

According to Monroe (1998), words are labels-nothing more, nothing less for concepts. Based on research reported by Vacca and Vacca (1996), a single concept,

however, represents much more than the meaning of a single word. McKeown and Beck (1988), suggested that by developing conceptual understanding, vocabulary instruction should involve students in deep processing of words. They believe that students should link new vocabulary with their background knowledge by describing what they already know about the topic, make up sentences using new vocabulary words, identify word relations and dictionary definitions in combination with using words in context, and develop word lists or banks. Students may be apprehensive at first; therefore, it is the teacher's role to encourage reluctant students and demonstrate the benefits of graphic organizers. It is the teacher's responsibility to provide appropriate activities and pre-teach vocabulary. Pre-teaching vocabulary may facilitate improved decoding and, hence, comprehension.

Vocabulary words can be presented by the teacher or practiced in dyads, as in a peer-tutoring format. Peer-tutoring could have the additional benefit of social interaction between students with and without disabilities. Active student responding and information recall are related in that more frequent opportunities for academic responding may facilitate mastery of frequently encountered vocabulary and facts.

CONSTRUCTION OF GRAPHIC ORGANIZERS

According to Merkley and Jeffries (2001), constructing a graphic organizer does not have to be a difficult task. There are many suggestions for constructing graphic organizers independently. When constructing a graphic organizer the teacher should analyze the learning task for words and concepts important for the student to understand. It is important to pre-select the information you intend to present to the students. The teacher must consider the piece of literature and ask himself or herself the following

questions: Why did I choose this particular piece to read with my students? Where will my instructional focus be targeted? What are the central ideas the piece might convey to its readers? Are any of these concepts likely to be difficult for my students without additional assistance? At the conclusion of answering the prior questions it is then beneficial to arrange the words to illustrate the interrelationships and pattern(s) of organization.

The popular decisions are not always the right decisions. In current research graphic organizers are favored over the aforementioned traditional vocabulary instruction. The graphic organizer approach has two advantages over choosing a random list of difficult terms from a given story. According to Barton's (2001) research, related words are easier to remember than a random list of words generated by the teacher. The experience of interrelating words may help students grasp the story concept. When examining selection vocabulary there is one question that is consistent through reading and research. The question is "how many new words can you include in each vocabulary lesson" (Barton 2001, p.)? Barton's (2001), rule of thumb states that, the more difficult the concept, the fewer the words initially introduced to the students. Add additional terms once students have a better understanding of the concepts. Barton (2001) believes the presence of familiar words already in your students' repertoires will help them comprehend new vocabulary, so it is beneficial to the teacher to address these prior experiences. Students will use what they already know to make meaningful connections with new information. Meanwhile, teachers should evaluate the relationships the students come up with, including the simplicity and effectiveness of the visual and create a

graphic representation of that information. Barton (2001) suggests at this point the teacher should search for logical connections among the vocabulary words.

When constructing a graphic organizer it is important to design the visual organization in advance. The visual organizer should be planned before the lesson. This practice could be quite helpful if the teacher has the students engage in the structure's development as well. During instruction the teacher should fill in the blanks with significant words in order to encourage students active reading. The visual structure can be developed on the board with the teacher's guidance, or independently with students who are experienced in the use of graphic organizers. If graphic organizers are completed individually without the teacher's guidance it is a good idea to have students share their responses with the other students. This will give students the opportunity to verify their responses and add any additional information to their present schema.

Developing a follow-up activity is good practice as well. Develop the follow-up activity with the intention to use it at the completion of the graphic organizer activity. This allows time for vocabulary review and reinforcement. The follow-up activity should be developed with the intention to be used after the visual organizer is complete and the story has been thoroughly discussed. According to HAMFF (1999), the primary purpose of follow-up is to give students more active practice with the words. Follow-up activities can also support further consideration of the story and related concepts.

According to Lovitt and Horton (1994), a similar strategy is used when constructing graphic organizers for textbook instruction in content area classes. First the teacher should observe and collect material that has been difficult for students to understand, in prior lessons. Then the teacher should construct an outline of the material

that will be reviewed for additional reinforcement. The most significant part of this instruction is choosing the right form of graphic organizer. It is important for the teacher to keep in mind that the graphic organizer should display the key concepts and illustrate the relationships among the key elements of the concept. Based on this information, the teacher should, select a graphic organizer that matches the structure of this information. "Prepare a teacher's version of the graphic organizer that includes all the information in the diagram, and a student's version for which information from certain categories is missing" (Lovitt & Horton, 1994 p. 110).

When choosing a graphic organizer there are several forms from which to choose. Types of graphic organizers, by Martella, Miller, & MacQueen (1998), include: *hierarchial*- present main ideas and supporting details of a topic, *comparative*- similarities and differences among key concepts, *sequential*- steps or events are illustrated, and *diagrams*- illustrate actual objects and systems in the real world. As described by Bromely, DeVitis, & Modlin (1995), graphic organizers consist of: *hierarchial*- describes a pattern that includes the main concepts and levels of subconcepts under it, *conceptual*- pattern that includes a central idea with supporting facts, characteristics and or examples, *sequential*- arranges events in a chronological order, and *cyclical*- a series of events within a process in a circular formation that has no beginning or end, just a continuous sequence of events. These materials could include charts, graphs, maps, flowcharts, or other structures that help one visualize the materials in texts. Frequently used graphic organizers as described by Egan (1999) include: *venn diagrams*- facts or ideas about a topic from two different perspectives or eras are listed in two different columns with the similarities listed in a third, central column; *semantic maps*-

select an important word, students link it to related words, they are listed on the board, students rank the related words from most to least important, and then organize the words in a diagram; *geneological trees*- a hierarchical diagram of words constructed by the teacher; *frames*- two dimensional graphic organizer that allows the teacher to display in an organized manner important information related to the targeted key topic, and *word webs*, are useful in situations where new words naturally group together into categories around a central concept.

With the use of word webs the teacher asks students if they already know any words that might fit into the categories of choice. Then the teacher places these familiar terms into the web. When reviewing the story, the teacher and students identify other words that relate to the central concept. According to Barton (2001), the teacher guides students as they guess how these terms might be categorized in the web. The new vocabulary words are then discussed through the context of the story and linked with words the students already have in their vocabulary. According to Graves (1987), by linking new vocabulary to words familiar to the students in this visual manner, students will be more apt to recall the vocabulary meanings and carry them over to content area classes.

EXAMPLES OF GRAPHIC ORGANIZERS

Harmon and Hedrick (2000) developed an instructional framework called, "Zooming in and Zooming out" that focuses on discriminating as well as interconnected features of social studies concepts. The framework helps teachers scaffold student learning of important vocabulary and concepts. The framework situates the concept within a larger picture and provides an in-depth examination of the content concept itself.

This helps students to activate prior knowledge about the concept before reading. The framework is organized to guide and support student interactions with passages from the text both during and after reading. The framework addresses the needs of students at all ability levels, with or without learning disabilities, by accepting a variety of responses at significant points in the lesson. "It highlights important ways to make connections, focuses on higher level thinking through a critical evaluation of the importance of ideas, and gives students an opportunity to actively participate in class discussions" (Harmon & Hedrick, 2000 p. 156). Students are asked to make associations with related ideas and articulate knowledge about the concept being addressed. The implementation involves brainstorming, reading, discussion (Zooming in Zooming out), formulating summaries, and extending the work. "The visual representation is not meant to be given to students as a worksheet, but rather to guide teachers as they engage students in sharpening their understanding of new concepts through class discussions" (Harmon & Hedrick, 2000 p. 158). They found success in this activity. "Zooming in" and "Zooming out" is a form of graphic organizer that outlines their Social Studies content that helps all of their students meet success.

Rosenbaum (2001) came up with the idea of a *word map* to benefit her students. She introduced the word map at the outset of the school year to her middle school readers. Her students had not had previous success with reading or standardized tests. She began by introducing a new novel to her class. She displayed a short list of words from the first chapter in the novel they were about to read. Rosenbaum (2001) modeled how to usé the map with the first word on the list, and then went on to demonstrate a second word for reinforcement. The remaining words, from the list, were mapped out by her

students independently. This type of activity was repeated daily, using teacher generated vocabulary lists. Soon mapping was second nature to the students, and Rosenbaum shifted the responsibility of finding vocabulary words to the students. She felt the sense of success when the students chose interesting and unfamiliar words. Through peer interaction, her students were able to clarify unfamiliar words and discussed their word mapping. Her students were taking an active role in their own vocabulary development, linking new words with prior knowledge, and applying the vocabulary in their own sentences.

Stahl (1986), recommended giving students both context and definitions. Rosenbaum's (2001) map did that. Stahl also suggested that by encouraging deep processing of comprehension, applying learned association to demonstrate understanding, and the actual generation of the word makes a novel sentence that will demonstrate the word's meaning more clearly. Rosenbaum's (2001) map did that too. Likewise, Baumann and Kameenui (1991) discussed three levels of word knowledge that can be used to consider depth of understanding and related instructional procedures: association, comprehension, and generation. Rosenbaum (2001) found that her students acquired all three of these levels of word knowledge with word mapping.

Another type of graphic organizer is vocabulary anchors. "Vocabulary anchors represent a graphic teaching strategy specifically designed to help young learners build the conceptual connections they need to understand informational text" (Winter, 2001 p. 659). This type of graphic organizer has been formally used for the vocabulary development of students from grades 2-5. "The search for a more friendly vocabulary frame began with the notion of developing a narrative that could serve as both a tie to

immediate experience and a bridge to understanding how new words are learned" (Winter, 2001 p. 660). This process starts with a drawing or image that is familiar to the students. For instance, when introducing a word related to a boat, draw or obtain an image of a boat. The frame is then introduced by means of a brief narrative including the term in context. This is followed by a discussion that highlights the idea of an anchor, related term. This discussion also provides an anchor to comprehension, "new learning that is not connected to existing concepts in some way is likely to drift away" (Winter, 2001 p. 660). According to Winter (2001), following this discussion, the teacher can then demonstrate the use of an anchor by beginning with a content-specific term that is fairly a common. Winter (2001) illustrates this process with the term hurricane. In this example, the teacher would draw a very simple picture of a boat on the chalkboard or overhead projector and place the target term, hurricane, within the boat. Winter (2001) states that the teacher then selects a similar word, such as thunderstorm, that students are likely to know and place it inside a rectangular anchor beneath the boat, connecting the two by means of a tethering line. While thinking aloud and demonstrating the teacher then comments on similarities between a thunderstorm and a hurricane. Under the box, the teacher has the opportunity to note characteristics the two words have in common. "Once students have observed the teacher thinking aloud while working through the construction of a vocabulary anchor, the teacher can lead students through the construction of their own anchor for a targeted content term" (Winter, 2001 p. 661).

In a lesson using Joanna Cole's "A Snake's Body" (1981), a vocabulary anchor was used to teach the term, "molting". In this lesson the teacher began by constructing a drawing of a boat, placing the term inside the hull. "Thinking aloud, the teacher

explained that molting was similar to the idea of shedding. She engaged students in conversation about what it means when we say a dog is shedding" (Winter, 2001 p. 661). The teacher proceeded with a discussion. Through the discussion she had the opportunity to emphasize particular ways in which the two terms are related. She then continued with noting significant differences.

This anchor strategy is flexible enough to be used across multiple disciplines. According to Winter (2001), with younger students it is wise initially to focus upon vocabulary anchors in a directed teaching format as a pre-reading activity. As students gain familiarity with the construction procedures, they can use partially completed vocabulary anchors to identify terms in their independent reading that may be confusing. "The frame provides a scaffold for active exploration and incorporation of newly identified content vocabulary in keeping with the spirit of active, talkative learning" (Winter, 2001 p. 661). This frame appears to work well when applied selectively. Frames are most appropriate for terms that are new to students, but have a relatively straight-forward association with prior knowledge and experience. "If a teacher's purpose is to demostrate the relationship of multiple concepts under broader classifications, other frames such as hierarchical graphic organizers would be more appropriate" (Moore & Readence, 1984 p. 14). With the prior clarifications in mind, it is understood that, "using vocabulary anchors allows a primary or intermediate grade teacher to incorporate a user-friendly metaphor for learning while honoring the social language and unique personal experiences of his or her students" (Winter, 2001 p. 662).

Another form of graphic organizer discussed in the literature was described by Fisher (2001). This approach was implemented at the elementary level and was based on

McGee and Richgels (1985) comprehensive plan. Their comprehensive plan included building a three-dimensional model to show text structure. According to Fisher (2001), it also provided systematic teacher-directed instruction for using graphic organizers to create written summaries of text types. Based on this plan, Fisher (2001), created a graphic organizer notebook to complement a science chapter in a fourth grade text. She began by following a classroom teacher's science lesson and conducting reviews by modeling and guiding her students through the completion of a graphic organizer. This approach enabled her to model a think-aloud process for note taking and encouraged student discussion.

To customize each graphic organizer that she used, Fisher had to decide what type of graphic organizer would best enhance the text pattern, and develop a plan for the amount of space needed for students to record information. Fisher (2001), also included additional lines for recording any miscellaneous notes that the students may find useful to their understanding. Fisher (2001), found as she guided the class through the completion of the graphic organizer notebook, there were many opportunities to demonstrate how visualization strategies can improve vocabulary, and therefore, reading comprehension. When faced with complicated concepts in the text, she also modeled how slow reading and rereading to visualize can improve comprehension. "Implementing the graphic organizer notebook also enables teachers to accommodate students with various learning strengths" (Fisher, 2001 p. 118). Both auditory and visual learners benefit from the graphic organizer notebook. All of the students are provided with strategies for content retention and recall.

There are additional benefits in implementing graphic organizer notebooks in the classroom. "Graphic organizer notebooks serve as manageable and motivating tools for studying" (Fisher, 2001 p. 119). They also provide students with a clear understanding of what they need to know and what they already knew. Fisher (2001), also found a teaching advantage in the use of the graphic organizer notebook. She has found in using the graphic organizer notebook there is a variety of material available for preparing students to write essays. The graphic organizer notebooks serve as excellent outlines which can help assist students when they practice writing essays. They can learn how to incorporate pertinent information into their essays. Fisher (2001), found that implementing the graphic organizer notebook in a content area unit truly enables teachers to teach reading, writing, vocabulary development, and study skill strategies in a way that meets the needs of all students. "The graphic organizer notebook is a tool for implementing an approach that focuses not on the 'what to do' but rather 'how to do it'-which is teaching at its finest" (Fisher, 2001 p. 119).

IMPORTANCE OF VOCABULARY INSTRUCTION

Through all of my reading and research I found an answer to a very important question. Why teach vocabulary? "To really know a word means to move it from our receptive vocabulary, where we recognize a word and can accurately identify its correct meaning in a multiple choice situation, into our productive vocabulary, where we come to use the word knowingly and flexibly in a variety of situations" (Barton, 2001 p. 82). Students' vocabulary grows into productive vocabulary when teachers assist them in the development of the words and their usage. This instruction helps students gain vocabulary fluency. Vocabulary instruction can help students learn how words relate to

ideas and concepts in the stories they read. Learning words is important for improving comprehension. Students learn new words and gain a better understanding of the literature read together in the classroom. "The need for rich and meaningful vocabulary knowledge in developing concepts in content areas is documented by research and is generally accepted by classroom teachers" (Monroe & Panchyshyn, 1996 p. 538). Key vocabulary serves as a foundation on which facts, concepts, and relationships are built. Students who have a command of a subjects' vocabulary stands a better chance of mastering that subject than will students who lack familiarity with the key terms of that subject area. Effective use of graphic organizers appears to meet these conditions exceptionally well.

CURRENT INVESTIGATION

The literature review supports the use of organizational strategies in complementing vocabulary instruction; however there is limited research dealing with the use of graphic organizers as an assessment tool for learning disabled students. In contrast, the traditional assessment for vocabulary instruction includes matching, fill-ins, cloze passages, and rote knowledge. The present study was designed to investigate the effectiveness of graphic organizers in vocabulary instruction and assessment for the aforementioned group of individuals. The research hypothesis was that graphic organizers would be a more effective tool for vocabulary instruction and assessment than traditional forms of instruction and assessment. It was expected that vocabulary presented with the use of a graphic organizer, and assessments designed in graphic organizer format would increase the level of comprehension and retention of vocabulary words presented in the classroom. This was expected because according to Allen (1999), Dunston (1992),

Dye (2000), and Monroe (1998) students learn best when their schema was activated and they were able to personalize their meanings of words. Graphic organizer instruction and assessment allowed for this type of flexibility and personalization.

METHOD

PARTICIPANTS

The participants consisted of ten 7th grade male students between the ages of 12 and 13. Seven students were Caucasian, one African American, and two Hispanic. All students were of a middle class socioeconomic status. Seven students were classified with a specific learning disability (SLD), and three were classified under other health impairment (OHI).

The subjects were split into two groups labeled A and B. Each group contained five students. The groups were equalized based on students' abilities.

MATERIALS

The materials used included an overhead projector to model the use of graphic organizers during graphic organizer instruction. Duplicate copies of graphic organizers, used during instruction, were made available to all students. The teacher selected vocabulary from various short stories taken from the 7th Grade Reading Curriculum. The assessments included teacher created achievement tests. The Achievement tests consisted of traditional formats (fill-ins, cloze passages, rote knowledge, and/or matching) and a graphic organizer format.

PROCEDURE

All subjects were exposed to graphic organizer and traditional methods of vocabulary instruction, rotating on a weekly basis. During the first week all students were

instructed with a graphic organizer. At the end of the week all students were given a vocabulary assessment of all vocabulary learned during that week. Group A was given a graphic organizer assessment. Group B was assessed with a traditional method. At the beginning of the second week, all students were instructed with a traditional method of instruction. At the end of the second week, Group B was assessed with a graphic organizer and Group A took a traditional method of assessment. This ensured that all students were exposed to the different forms of assessment when instructed with either a graphic organizer and/or traditional method.

For instruction and method of assessment for the following weeks refer to the chart below:

Week	Instruction	Group A-Assessment	Group B-Assessment
1	Graphic Organizer	Graphic Organizer	Traditional Method
2	Traditional	Traditional Method	Graphic Organizer
3	Graphic Organizer	Traditional Method	Graphic Organizer
4	Traditional	Graphic Organizer	Traditional Method
5	Graphic Organizer	Graphic Organizer	Traditional Method
6	Traditional	Traditional Method	Graphic Organizer
7	Graphic Organizer	Traditional Method	Graphic Organizer
8	Traditional	Graphic Organizer	Traditional Method

DATA ANALYSIS

At the end of each week achievement tests were scored and recorded. At the end of the eight weeks, results from the two groups were compared based on the type of

assessment in combination with the instruction given. The combinations of assessment and instruction given included:

1. Graphic Organizer Instruction; Traditional Assessment
2. Traditional Instruction; Graphic Organizer Assessment
3. Graphic Organizer Instruction; Graphic Organizer Assessment
4. Traditional Instruction; Traditional Assessment

Means were calculated for each condition. Statistical differences between means were examined using Analysis of Variance (ANOVA).

RESULTS

The results of the study were analyzed using an Analysis of Variance (ANOVA). An alpha level of .05 was used for all statistical tests.

The mean for the group that had the graphic organizer instruction and the graphic organizer test was 79.55 and a standard deviation of 19.55. The mean for the group that had the traditional instruction and the traditional test was 93.15 and a standard deviation of 12.49. The group that had the graphic organizer instruction and the traditional test had a mean of 85.55 and a standard deviation of 21.01. The final group, traditional instruction and graphic organizer test mean was 83.40 and a standard deviation of 18.36.

An Analysis of Variance (ANOVA) was performed. The effect of instruction and test type was not statistically significant, $F(3.76)=1.99$, $P= .122$. The students that took part in this study maintained their average test scores despite the differences in instruction and assessment.

DISCUSSION

According to the results of the study there were no significant differences displayed in scores for the four different teaching/assessment techniques. The use of graphic organizers in instruction and assessment did not prove to make a significant difference for the special education students that took part in this study.

This study is inconsistent with the results found in prior studies concerning the use of graphic organizers as a tool for instruction and/or assessment. Prior studies suggested that allowing students to use their own words and phrases and activating their schema in learning vocabulary would allow them to learn and recall the use of the new words more efficiently. The current study did not support prior results. When the ten students were instructed with the use of schema techniques and visual graphic organizers their test scores remained the same as before.

This study may not complement prior findings, but it does extend the knowledge of the success related to the use of graphic organizers. According to the results of this study, graphic organizers are not necessarily successful in all situations. Although they do not hinder the instruction and assessment of vocabulary they do not necessarily advance them either. Graphic organizers are a viable option, but they should not be expected to advance vocabulary instruction and assessment.

The fact that only ten students took part in this study may put limitations on the significance of the results found. If a larger population were used, the findings may have been different. This study was also limited to students that had learning disabilities. This limitation may have also had an effect on the findings. Also, prior to this study the students were instructed and assessed solely with the use of traditional methods, therefore

the use of graphic organizers was a new concept for them to grasp. It is possible that if the students were instructed and assessed with graphic organizers over a longer period of time they may have been more successful. It is possible that students test scores could have displayed a significant difference, as previously found in studies. These particular students didn't have the luxury of time. They were limited to an eight week time period. This limited time period may have not been enough practice with graphic organizers for students with learning disabilities. If the study ran over a longer period of time the students may have had a better chance improving their test scores.

If another study were to follow, one might test the use of graphic organizers as a form of instruction and assessment with a larger population and for a longer period of time to get a clearer picture of the effects. Students with learning disabilities may benefit with an extended research study. A study performed with students without learning disabilities may not need the extended time but a longer study may still be beneficial in that spectrum as well.

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